THE DER WEEKLY

The Power to Choose

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In This Issue:

Industry News

International Automated Systems Inc. (IAS) has completed a test run of a prototype turbine engine. IAS states that the turbine generates electricity with virtually any type of fuel, can be produced at approximately one-tenth the size and cost of traditional turbines (a 600 hp turbine will weigh less than 50 lbs.), and can meet both massive and small capacity needs. IAS plans to begin production on commercial units later this year, with inexpensive systems for homes and businesses to be the company's primary targets.
www.iaus.com

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Rhombic Corporation secured a $2.5 million convertible debenture to enable the company to develop its diamond material for fuel cell applications. The work will begin in Columbia, MO, in April, and focus on proton polymer exchange membrane fuel cells and the development of carbon nanotubes for hydrogen storage. www.rhombic.com

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Hydrogen Burner Technology Inc. (HBT), a fuel cell company, has withdrawn its proposed $119.6 million initial public offering. HBT originally announced it had intentions to go public in September 2000, but in a letter to the Securities Exchange Commission on March 12, the company said that current adverse market conditions caused it to back out. www.newstraders.com

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A new energy fund, which will invest in non-regulated power and energy sources, has been introduced by Munder Funds. The equity mutual fund is called **Munder Power Plus Fund,** and is designed to take advantage of the increased demand for energy and power, restructuring of the electricity and gas markets, and the growing availability of new power technology sources. The fund will invest in companies involved in conventional energy sources as well as renewables, but will not invest in regulated companies, such as utilities. In a press release, the senior portfolio manager for Munder stated that **"distributed power generation will play a critical role"** in its investment holdings. www.munder.com

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A UK-based company, **Urenco Power Technologies**, has developed a new energy recycling system to save energy and cut costs on London's Tube. The system is made from carbon-fiber and works by storing the energy created from braking trains and converting it back into electrical power. High-speed flywheels will be placed along the tracks to collect the energy, which will then be stored for future use. The system is expected to be operational by next year.
www.thisislocallondon.co.uk.

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The **City Council of Nashwauk, MN,** is conducting a feasibility study to determine whether it should install a biomass-fed electrical generation and fuel-producing plant. The facility would cost $100 million and produce 12 MW of electrical power and 1 million gallons of synthetic diesel fuel, ethanol, and propanol. Approximately 4 MW of the power it produces would be used to power the city, and the remaining MW would be sold. www.duluthnews.com

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According to **Allied Business Intelligence** (ABI), the fuel cell industry is expected to greatly expand during this decade, increasing overall fuel cell energy generating capacity by a factor of 250 to more than 15,000 MW by 2010 from 75 MW in 2001. ABI has released a study, "Stationary Fuel Cells: US and Global Early Market Opportunities," which includes summary discussions on regulatory and tax practices, environmental regulations, and business considerations affecting present and future work on fuel cell technologies. www.alliedworld.com

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A Duetsche Banc Alex Brown analyst released a report siting that the US could be faced with an excess of power by 2005. Though regions of the country are facing a power crunch now, by 2004 the national average capacity reserve is expected to be 14%. The report also mentions that based on the pace of expected additions Texas will see an oversupply by next year. "We continue to be confident that the question of excess generating capacity in the United States is a question of 'when,' not 'if,'" the report says.

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On March 1, 2001, the New Jersey Board of Public Utilities (NJBPU) ordered a three year proposal totaling more than $358 million in funding for new energy efficiency programs that will help customers reduce energy use and lower their bills while

(Continued on page 2)

The Weekly Factoid

The DOE has a goal of reaching 92 GW of installed combined heat and power by the year 2010.

developing renewable energy sources. The first year spending for 2001 will be $115 million, approximately $119 million in 2002, and approximately $124 million for 2003. Of the funding, 75 percent will go to efficiency programs, and 25 percent will be used to fund renewable energy projects. NJBPU will determine the fourth year's funding level, and the funding for the four years thereafter, at the end of the utilities' rate cap period in August 2003. Funding will be collected through the Societal Benefits Charge as specified in the Electric Discount and Energy Competition Act (EDECA). The NJBPU will increase spending on new energy efficiency and renewable energy programs by $103 million over the next three years from what customers are paying now.

DOE News

The Energy-Efficient Large Commercial Absorption Chiller has been selected for one of the Energy 100 Awards announced in Washington. The Energy 100 Awards honor 100 of the best scientific and technological accomplishments of the DOE during the 20th century.

Researchers in DOE's Thermally Activated Technologies Program are working on a cost-shared program with York International. The objective is to build a U.S.-developed triple-effect absorption chiller (or natural gas powered air conditioner) that operates using conventional lithium bromide-water fluids. The double condenser couple (DCC) triple-effect cycle-patented by ORNL is the base cycle being investigated by York International.

The proposed triple-effect absorption chiller has a coefficient of performance of 1.45 or higher, a 30% improvement over the best double-effect chillers currently on the market.

This next generation of efficient commercial chillers could enable U.S. manufacturers to re-establish leadership in the multi-billion dollar world absorption chiller marketplace and could feasibly be used to convert waste heat to cooling for buildings to reduce peak electric demand.

In 1998 York successfully operated a 400-ton laboratory prototype DCC triple-effect chiller and has proved that the DCC cycle performs as expected. A direct gas-fired 450-ton field test unit has been fabricated for installation at the Clark County Government Center in Las Vegas, Nevada.

By the Numbers

7	Billions of dollars traded in California's deregulated market
2.4	Power consumption in watts of an ink jet printer plugged in, but turned off
7.7	Power consumption in watts of an ink jet printer turned on, but not being used
800	2000 approximation in $millions of venture capital investment in distributed energy
70	Percentage of power the Northwest receives from hydropower

Feature of the Week

Contractor Review Meeting for Thermally Activated Technologies

On March 9, 2001, Ronald Fiskum of the Office of Distributed Energy Resources held a contractor review meeting for Thermally Activated Technologies and Fuel Cell Program at Energetics, Inc. headquarters in Columbia, MD. This was the first time all the contractors for the Thermally Activated Technologies Program met to discuss and share their work. Presentations included descriptions of research and development activities on absorption cooling, desiccants, fuel cells, Buildings Cooling Heating and Power (BCHP) integration, and other topics.

Participating contractors included representatives from:

Brookhaven National Laboratory
Oak Ridge National Laboratory
Pacific Northwest National Laboratory
National Renewable Energy Laboratory
D&R International
Energetics Inc.
Exergy Partners

Each contractor presented an overview of their program assignments, major goals, milestones achieved, deliverables, and planned activities.

After the presentations the group discussed ideas and reoccurring themes that should be the focus for contractors. These included more interaction and emphasis on teamwork, seizing near term opportunities and the "fruits" associated with the opportunities, promoting the "Power to Choose" concept and promoting the impacts of these technologies on load management (power costs, quality, etc).

H.R. 954 Introduced

The **Home Energy Generation Act** (H.R. 954) was introduced on March 8, 2001 by Congressman Jay Inslee (R-WA). The bill would amend the Federal Power Act by allowing small electric energy generation systems to use net metering. Listed in the text as qualified units for net metering are fuel cells; solar, wind, and biomass energy resources; units that do not generate more than 100 kW of power; installations located on the customer premises; units that operate in parallel with the retail electric supplier; and systems with the primary intent to offset part or all of the customers' energy requirements. The legislation also addresses issues related to measurement and billing, safety and performance standards, interconnection, and consumer friendly practices. The bill currently has 14 cosponsors and is receiving bipartisan support. http://thomas.loc.gov

Regional Office Review

The Denver Regional Office submitted its plan to support the Distributed Energy Resources Program to HQ/DER and to the other 5 Regional Offices. The plan includes background, a Regional Outlook, a summary of existing and planned DER programs in the region, an initial inventory of DER activities in DRO's states, and a summary of policies in support of, and barriers to, distributed generation in the 12 DRO states.

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On March 13, Ryan Wiser of Lawrence Berkeley National Laboratory (LBNL) delivered a presentation to a meeting of the Northeast renewable energy system-benefits charge (SBC) fund managers. These fund managers, representing a substantial number of the Northeastern states, will collect over $1.1 billion from 1998 - 2012 to support the development of renewable energy and fuel cell markets in the region. Ryan's presentation, titled "Clean Energy Funds: An Overview of State Support for Renewable Energy," was based on a draft report prepared in part by LBNL (and funded by OPT's Electricity Restructuring and Wind programs) that summarizes the status and performance of these SBC-funded programs.

CALENDAR OF EVENTS

Date	Event	Location	Other Information
		MARCH 2001	
20-24	Distributed Generation Conference	San Diego, CA	www.powerin.org
20-21	Fuel Cell Investor 2001	Boston, MA	www.srinstitute.com/cr188
21-23	5th Annual Distributed Generation and On-site Power Conference	New Orleans, LA	Pat Hoffman to give keynote address; www.dist-gen.com
21-23	Western Energy Institute Distributed Generation Conference	San Diego, CA	www.powerin.org/distgenregform.html
22-24	Building Energy 2001	Boston, MA	Jonathon Tauer 413-774-6051, ext. 20
27-28	Distributed Generation, the Restructured Market, and your Energy Future	Atlantic City, NJ	www.aeecenter.org or (770) 925-9633
28-30	Infocast's 3rd Annual Conference on Electric Distribution Reliability Planning	Boston, MA	www.infocastinc.com or (818) 888-4444
29-31	Sharing the Load: Local Electric Energy Generation Realities	Cloud, MN	www.regionalpartnerships.umn.edu
		APRIL 2001	
2-3	Business Communications Company's 1st Fuel Cell Conference	San Antonio, TX	www.buscom.com
2-4	Computational Skills for Electricity Markets	Madison, WI	http://epdweb.engr.wisc.edu/brochures/A575.html
23-25	Intertech's Fifth International Conference on Distributed Power	Washington, D.C.	Hugh Olmstead; olmstead@intertechusa.com; 207-281-9606
12	IEEE Wenatchee Section and DOE: Fuel Cell Technology Forum	Wenatchee, WA	Matthew Davis; matthew.davis@ieee.org
30-May 5	Affordable Comfort Conference: Home Peformance Strategies	Milwaukee, WI	www.affordablecomfort.org
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CALENDAR OF EVENTS

Date	Event	Location	Other Information
		MAY 2001	
1-3	Industrial Energy Technology Conference	Houston, TX	jim@esl.tamu.edu
9-10	Second International CHP Symposium	Amsterdam, Netherlands	www.2ndCHPsymposium.com; Bob Dixon invited to speak
9-10	Energy Management Conference	San Diego, CA	Sponsored by FEMP; www.aeecenter.org
9-11	GasMart Power 2001	Tampa, FL	www.gasmart.com or (800) 427-5747
21-23	Third Annual ICEPAG (International Colloquium and Exhibit on Environmentally Preferred Advanced Energy Generation) Conference	Newport Beach, CA	www.parcon.uci.edu/colloquium ; Page 5 has more detailed info
24-25	Together with the First United Nations and DOE (FE and EE) Conference on Hybrid Power Systems	Newport Beach, CA	www.parcon.uci.edu/colloquium ; Page 5 has more detailed info
30-31	Fuel Cells Codes & Standards Summit V	College Park, MD	ronald.fiskum@ee.doe.gov
		JUNE 2001	
3-6	FEMP Energy 2001 Conference	Kansas City, MO	www.energy2001.ee.doe.gov
3-7	WindPower 2001 Conference	Washington, DC	www.awea.org; laura_keelan@awea.org
11	Fuel Cell Transportation Technology Summit	San Jose, CA	Sandra Gadzia; gadzia@sae.org
11-13	International Symposium on Distributed Generation: Power System and Market Aspects	Stockholm, Sweden	www.ekc.kth.se/ees/workshop/DG.htm
18-20	APPA National Conference	Washington, DC	www.appanet.org
		JULY 2001	
10-12	Gas Storage Workshop	Kingston, Ontario	David Quinn; quinn-d@rmc.ca
24-27	ACEEE Summer Study	Tarrytown, NY	www.aceee.org; Rebecca Lunetta 302-292-3966
		AUGUST 2001	
29-Sep 3	IEEC Integrated Energy Efficiency Congress	Cleveland, OH	Sponsored in part by FEMP; www.aeecenter.org
		OCTOBER 2001	
24-26	World Energy Engineering Congress	Atlanta, GA	www.agcc.org

Conference Announcements

The 3rd Annual
INTERNATIONAL COLLOQUIUM and EXHIBIT on
ENVIRONMENTALLY PREFERRED ADVANCED
GENERATION (ICEPAG)
May 21 - 23, 2001

ICEPAG is organized by the US. Department of Energy; the California Energy Commission; the World Bank; the Pacific Rim Consortium on Energy, Combustion, and the Environment; and the U.S. Environmental Protection Agency. The colloquium features tutorials from world-renowned experts in emerging energy technologies, environmental impacts, economic drivers, and regulation.

Intensive short courses are offered in: Next Generation Transportation, Environmentally Sensitive Combustion Technologies, Fuel Cells, Gas Turbines, Life Cycle Analyses, and Grid Connectivity. Additionally, major international energy and distributed technology companies will present exhibits throughout the Colloquium.

The 1st Annual
UN/DOE HYBRID CONFERENCE
May 23 - 25, 2001

The Hybrid Conference is sponsored by DOE's Office of Fossil Energy and Office of Power Technologies, the National Energy Technology Laboratory, and the United Nations Economic Commission for Europe (UNECE). Hybrid power systems are defined as the combination of two or more energy conversion devices that, when integrated, provide additional advantages over those devices operated individually. Advantages can be realized in terms of fuel flexibility, efficiency, emissions, availability, economics, or sustainability.

The purpose of the conference will be to present emerging new and/or novel concepts in hybrid power systems that can maximize these advantages. It will feature plenary sessions on Hybrid Systems Perspectives; Fuel Cell/Gas Turbine Hybrids; Energy Efficiency and Renewable Hybrids; and Component and Enabling Technologies.

Upcoming Solicitation

POWER SYSTEMS TECHNOLOGIES, DISTRIBUTED POWER GENERATION & COMBINED HEAT AND POWER APPLICATIONS

Proposals due May 15, 2001

The New York State Energy Research and Development Authority (NYSERDA) announces a program to support development and demonstration of distributed generation (DG) systems, components, and related power systems technologies and combined heat and power (CHP) applications in industrial, municipal, institutional, commercial, and residential sectors.

Projects that will be considered for funding include:

- development and commercialization of power systems technologies, including DG or CHP systems or components manufactured in New York State; or
- demonstration of DG and CHP feasibility, cost-effectiveness, reliability, and replicability at New York State sites.

NYSERDA plans to award $10,000,000 in multiple cost-shared contracts. Maximum available NYSERDA funding for three types of projects considered under this program is: (1) $100,000 for feasibility studies, (2) $500,000 for product development, and (3) $1,000,000 for demonstrations.

Please see the NYSERDA website for more information.
www.nyserda.org/536pon.html